

WE CLAIM

1. A method for reducing ion contamination in an object, the ion contamination introduced by a contaminating ion beam milling step, the method comprising the steps of:
 - defining a suspected ion contaminated area; and
 - removing the suspected ion contaminated area by a non-contaminating process.
2. The method of claim 1 wherein the contaminating ion beam is a Gallium ion beam.
3. The method of claim 1 wherein the step of defining comprising calculating a suspected ion contaminated area in response to at least one contamination parameter.
4. The method of claim 3 wherein the at least one contamination parameter includes at least one temperature of the integrated circuit during a time period that starts at the contaminating milling step and ends at the step of removing the suspected ion contaminated area.
5. The method of claim 3 wherein at least one contamination parameter is the time period between the contaminating ion beam milling step and the step of removing the suspected ion contaminated area.
6. The method of claim 3 wherein the calculation is responsive to the materials from which the milled object is made of.
7. The method of claim 1 wherein the object is an integrated circuit.
8. The method of claim 1 wherein the object includes at least a substrate and at least one conductive layer.
9. The method of claim 1 wherein the steps of defining and removing are included within a fabrication process of the object.
10. The method of claim 1 wherein the steps of defining and removing are included within an inspection process of the object.

11. The method of claim 1 wherein during a period that begins at the contaminating ion beam milling step and ends at the step of removing the object is maintained in a relative low temperature.
12. A method for milling an integrated circuit, the method comprising the steps of:
 - milling the integrated circuit by a fast contaminating milling process, thus introducing ion contamination;
 - defining a suspected ion contaminated area; and
 - removing the suspected ion contaminated area by non-contaminating process.
13. The method of claim 12 wherein the contaminating ion beam is a Gallium ion beam.
14. The method of claim 12 wherein the step of defining comprising calculating a suspected ion contaminated area in response to at least one contamination parameter.
15. The method of claim 14 wherein the at least one contamination parameter includes at least one temperature of the integrated circuit during a time period that starts at the contaminating milling step and ends at the step of removing the suspected ion contaminated area.
16. The method of claim 14 wherein at least one contamination parameter is the time period between the contaminating ion beam milling step and the step of removing the suspected ion contaminated area.
17. The method of claim 14 wherein the calculation is responsive to the materials from which the milled object is made of.
18. The method of claim 12 wherein the object is an integrated circuit.
19. The method of claim 12 wherein the object includes at least a substrate and at least one conductive layer.
20. The method of claim 12 wherein the steps of defining and removing are included within a fabrication process of the object.
21. The method of claim 12 wherein the steps of defining and removing are included within an inspection process of the object.

22. The method of claim 12 wherein during a period that begins at the contaminating ion beam milling step and ends at the step of removing the object is maintained in a relative low temperature.

23. A system for reducing ion contamination in an object, the ion contamination introduced by a contaminating ion beam milling step, the system comprising:

means for defining a suspected ion contaminated area; and

means for removing the suspected ion contaminated area by a non-contaminating process.

24. The system of claim 23 wherein the contaminating ion beam is a Gallium ion beam.

25. The system of claim 23 wherein means for defining are capable of calculating a suspected ion contaminated area in response to at least one contamination parameter.

26. The system of claim 25 wherein the at least one contamination parameter includes at least one temperature of the integrated circuit during a time period that starts at the contaminating milling step and ends at the step of removing the suspected ion contaminated area.

27. The system of claim 25 wherein at least one contamination parameter is the time period between the contaminating ion beam milling step and the step of removing the suspected ion contaminated area.

28. The system of claim 25 wherein the calculation is responsive to the materials from which the milled object is made of.

29. The system of claim 23 wherein the object is an integrated circuit.

30. The system of claim 23 wherein the object includes at least a substrate and at least one conductive layer.

31. The system of claim 23 wherein during a period that begins at the contaminating ion beam milling step and ends at the step of removing the object is maintained in a relative low temperature.

32. A system for milling an integrated circuit, the system comprising:

means for fast contaminated milling of the integrated circuit;

means for defining a suspected ion contaminated area; and
means for non-contaminating removal of the suspected ion contaminated
area.

33. The system of claim 32 wherein the means for fast contaminated milling is capable of directing a Gallium ion beam towards the integrated circuit.

34. The system of claim 32 wherein means for defining are capable of calculating a suspected ion contaminated area in response to at least one contamination parameter.

35. The system of claim 34 wherein the at least one contamination parameter includes at least one temperature of the integrated circuit during a time period that starts at the contaminating milling step and ends at the step of removing the suspected ion contaminated area.

36. The system of claim 34 wherein at least one contamination parameter is the time period between the contaminating ion beam milling step and the step of removing the suspected ion contaminated area.

37. The system of claim 34 wherein the calculation is responsive to the materials from which the milled object is made of.

38. The system of claim 32 wherein during a period that begins at the contaminating ion beam milling step and ends at the step of removing the object is maintained in a relative low temperature.